

Weekly Report 2016.11.21-2016.11.27

Progress:

1. Huawei Project

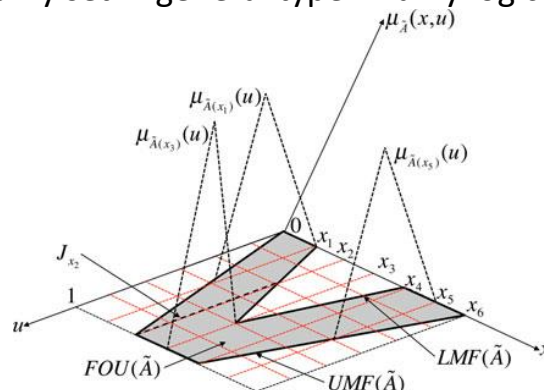
Firstly, I finished the documents of this project, including api document and design document. I also added code comments to the codes in our project.

In the middle of this week, Feiran told me that Huawei wanted the performance of our system to satisfy the requirement written in the contract, which means that our system should display 2000 nodes and 20000 edges in 1s, and 3000 communities in 1s. It is impossible to draw over 20000 objects by svg in 1s, therefore we must change svg to canvas. Luckily, our currently implementation is based on svg string instead of pure svg and d3. It didn't take too much time for me to change the svg string to canvas, and the interactions were also re-implemented.

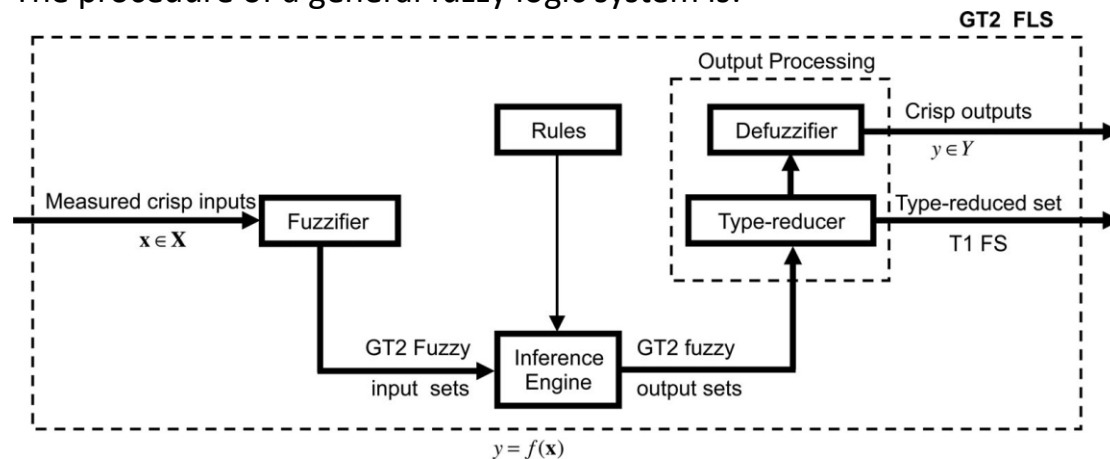
2. Temporal Ensemble Rankings

The fuzzy logic I implemented last week is a type-1 fuzzy logic. The latest fuzzy logic system is type-2 fuzzy logic system, which is far more complex than type-1 fuzzy logic system. There are two types of type-2 fuzzy logic, including interval type-2 fuzzy logic and general type-2 fuzzy logic. I found a tutorial named *General Type-2 Fuzzy Logic Systems Made Simple: A Tutorial*. The fuzzy sets in type-2 fuzzy logic is in a 3-D space, thus more complex than type-1 fuzzy logic.

An example of a fuzzy set in general type-2 fuzzy logic system:



The procedure of a general fuzzy logic system is:



In the next week, I will try to implement a general or interval type-2 fuzzy logic to see if this model works on our problem.

3. TCP Tree

This paper is rejected by PVis 2017 with score 4,3,3,2.

The major problem of this paper is the representation and the evaluation.

The review of 2:

- 1) The presentation lacks smoothness and clarity. It is hard to follow the flow of logical discussions.
- 2) Most of the design choices need more explanation. E.g., why was transfer entropy (TE) and mutual information (MI) used over so many other correlation metrics? Was it chosen by the domain expert? Between MI and TE, which one was used more often?
- 3) Was this system validated by the domain expert after it was built? In the video, I could see the values of MI and TE being shown up to 10(?) decimal places? Although it is a small thing, but this shows that this system may not have been used by the real users.
- 4) The system lacks insight. The authors need to show that this system is useful for the visual exploration tasks through some user study or at least the domain expert feedback. The authors mentioned they had an expert with them. The authors should provide his feedback and why this system was useful in achieving the goals. Since the authors have still around two pages unused, these discussions can be easily incorporated to make the paper stronger and acceptable.
- 5) Please check for grammatical mistakes, typos, and misplaced figures thoroughly. Where are Figure 3-a,b,c? I only see Figure 3 and I am not sure how to understand Section 5.1 without knowing Fig 3-a,b,c.
- 6) The video is not easy to follow. This video can be much improved by adding voice to guide the viewers through different steps and describing the design choices and visualizations. Where are the color-maps? At this current state, the video does not establish the usefulness of the system.
- 7) This paper is not in pacvis format. Authors are strongly recommended to follow the formatting guidelines.

It was a very terrible mistake to use a wrong template in the paper, I didn't realize that the format of pvis paper is different from the tvcg journal. I will remember to check the guidelines every time before

submitting my paper.

In the next week, I will follow the reviews to revise my paper, including adding design choices, a domain expert feedback, and grammar issues. I will also make a new video to demonstrate our system.

Plan:

1. Huawei Project

Write the patent and go to Huawei for final check.

2. Temporal Ensemble Ranking Data

Talk with Prof. Wu, and revise the paper as soon as possible.